

Subject: glowbugs V1 #164

glowbugs

Thursday, November 27 1997

Volume 01 : Number 164

Date: Wed, 26 Nov 1997 08:50:52 -0600

From: mack@mails.imed.com (Ray Mack)

Subject: Re[2]: CB-to-Ten AM QRGs?

This sounds really exciting. I recommend we, as a group, pick "our" frequency.

I have developed 3 possibilities:

1) 29.0 is probably as good as any as a "pick a frequency" choice. At least we will know where to find each other.

2) I think the Hallicrafters CB-3 that I am using has a 1600 KC IF. If it uses high side receive oscillator, that would allow us to use low side injection and just swap the tx and rx crystals!! All you folks with hollow state CB's take a look. If most of us have that situation, we could pick a convenient CB channel and be all set without ordering crystals for "our" frequency.

3) This would be a great place to try out those rush boxes as well. If there is more interest in glowbugs vs. converted rigs, I suggest that we select 29.491. Digi-Key has some surface mount crystals that will work for *low* drive level oscillators directly or some HC-49 ones at 9.830 MHz that can be tripled to 29.491.

Ray Mack

WD5IFS

mack@mails.imed.com

Friendswood (Houston), TX

Date: Wed, 26 Nov 1997 11:51:29 -0500 (EST)

From: rdkeys@csemail.cropsci.ncsu.edu

Subject: Re: 811A Hartley Recap

> Eric, we are all pulling for you.....

We are all pulling for his 811A Hartley. He seems to have it well in hand.

> especially me, with a shiny, new-looking

> 811A just dying to be tried in your 80 meter circuit. I have a Heath HP-23-A

> power supply that, I believe, will provide 6.3 VAC for the filament and about

> 600-700 volts for the plate.

That should work, if it can deliver a clean and relatively stable 100ma.

My expectation for an 811A at 600 volts would be around 75ma to maybe

100ma, depending upon chirp factor (don't load it up beyond where it

chirps because of power supply pulling).

> I am planning to put it on a lightly stained
> piece of Oak that will be polyurethaned after staining. I will probably use
> a piece of aluminum for the front plate (unless that runs against the grain
> of the Hartley mystic!).

Ohhh, mysticism..... nah, just wierd science....(:+}}..... RF alchemy!

If you use a front panel there are two things to consider.....

1. If metallic, GROUND the panel, to prevent shock (always, right).
2. If metallic, space coils at least 3 to 4 inches from the panel if possible, since the panel will have some capacitance to ground (maybe good maybe bad depending upon your particular circuit).

The use of a protective panel for shock prevention is always good, as well as making sure the operators controls are at RF and DC ground at all times (Nat. Elec. Code), and key by means of an isolating relay.

> Anyhoooo, I am really anxious to put one together.
> I've heard that they are "Channel-Masters" and that, in order to maintain
> peace among the neighbors and their favorite TV programs, I will have to
> operate late, late at night. Let me know if that is your experience with
> Hartleys.

Hartleys are not particularly bad TVI generators. A good one will not generate any tvi at all, and is very clean in the harmonic content, IF properly coupled and tuned (Bob Rohrig can recite his Hartley tests for the group again, maybe? Something like 38 and better db harmonics down to 70db with proper tuning.). It is unlikely the average hartley will funamentally overload even closeby TV sets.

Just use due caution around open breadboard sets, and think about what it is you are doing, at all times. We don't need any zapped SK chops in the group, pushing up daisies.

73/ZUT DE NA4G/Bob UP

Date: Wed, 26 Nov 1997 11:59:39 -0500 (EST)
From: rdkeys@csemail.cropsci.ncsu.edu
Subject: Glowbugging this weekend anyone?

Let us rattle the bushes (or the brass monkey) some this weekend on the BA/GB QRG of 3579R545khz or 1802R500khz. The usual meeting time for most folks is 0300Z on 3579. But, I propose anyone with a late nite bent rally round at 0500/0600/0700Z on the 3579 or 1802 QRG. It seems the band dies out around 0500Z and only Sandy and I are up that late (surely we are not the only old geezers around that can't sleep?).

To show you what can be done, Sandy was running his 5 watt QRP set on an INDOOR 20 FOOT ANTENNA, and I worked him fine with the 2-tube regen set back in NC (weak and QSZ but copyable). I am WANTING to hear and QSO some of those ellusive WestCoaster folks yon beyond the great muddy etherland. 0500/0600/0700Z would be ideal for such folks to get

on and try their hand.

Hope to hear and QSO a bunch of youse folks over the next four days.

73/ZUT DE NA4G/Bob UP

Date: Wed, 26 Nov 1997 11:37:39 -0500 (EST)

From: EWoodman@aol.com

Subject: Modulation Xfmr Specs

Have been trying with no luck to find info on a Kenyon T493 modulation transformer. Anyone have a suggestion of where to look?

Tnx and 73 Eric KALYRV

Date: Wed, 26 Nov 1997 11:15:44 -0600

From: w5hvv@aeneas.net (Roderick M. Fitz-Randolph)

Subject: Re: 811A Hartley Recap

>> especially me, with a shiny, new-looking
>> 811A just dying to be tried in your 80 meter circuit. I have a Heath HP-23-A
>> power supply that, I believe, will provide 6.3 VAC for the filament and about
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>well as making sure the operators controls are at RF and DC ground at

>all times (Nat. Elec. Code), and key by means of an isolating relay.

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>fundamentally overload even closeby TV sets.

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>is you are doing, at all times. We don't need any zapped SK chops in the

>group, pushing up daisies.

>

>73/ZUT DE NA4G/Bob UP

Bob, what about a pair of parallel 811A's? The HP-23-A will apparently put out 700 volts at 250 ma. A little more at 200 ma. It has 6.3 volts AC at 11 amps so it should be husky enough for a pair of 811A's. Whatcha think? Any particular ideas on the type of parasitic suppressors to use in the plates and/or suppressors made of carbon resistors in the grid circuit?

Rod, N5HV
w5hvv@aeneas.net

Date: Wed, 26 Nov 1997 11:22:49 -0600
From: w5hvv@aeneas.net (Roderick M. Fitz-Randolph)
Subject: HP-23-A Power Supply

I am in the market for a Heath HP-23-A power supply. If you have one that is in good condition (mint preferred) and are willing to part with it, please let me know the price.

Rod, N5HV
w5hvv@aeneas.net

Date: Wed, 26 Nov 1997 14:23:41 -0500 (EST)
From: rdkeys@csemail.cropsci.ncsu.edu
Subject: Re: 811A Hartley Recap

>

> >> I have a Heath HP-23-A power supply that,
> >> I believe, will provide 6.3 VAC for the filament and about
> >> 600-700 volts for the plate.
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> >That should work, if it can deliver a clean and relatively stable 100ma.
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> Bob, what about a pair of parallel 811A's? The HP-23-A will apparently
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> think? Any particular ideas on the type of parasitic suppressors to use
> in the plates and/or suppressors made of carbon resistors in the grid
> circuit?

Parallel and paralleled push/pull are all fine. I would go push/pull first, then add a second tube on either side for a 4 tuber. If going MOPA, then use one tube as the oscillator and 2 or 3 paralleled as the amplifier.

Generically keep the current down to around 200ma and that should be fine.

I shoot for a little below the heating point where it begins to drift more than my conscience allows. That is usually sufficiently stable for modern use. In the old days, drift of up to a kc or more was not uncommon. I try to keep it down to a couple hundred hz or less in modern times. Lightly loaded, they can be very close to non-drifting, except for minor heating excursions. The trick, I have found, is to pick a larger tube than actually would be used, by one order of magnitude.....i.e., for a 5-10 watt input, drift-free, and easy to work, use a 50 watt bottle. For a 50 watt input, drift-free, use a 250 watt or larger, etc. That way, heating excursions are minimal. Running an 811 sized tube at around 10-20 watts input, should net a relatively stable set. 4 tubes should be stable at 40-80 watts input, by the same reasoning, and a pair at around 20-40 watts input. I would not want to push them much more than that, and expect them to remain stable on the air. The canonical test is to run it in a dummy load, increase power, and watch for the point where drift becomes unreasonable, and then don't load it out more than that (I would use about half that drift uncomfy point, myself).

Parasitic suppressors in the old days were small chokes inserted into the grid circuit, usually of the order of a few turns on a dowel rod of some kind. My guess is that any of the classic plate circuit suppressor chokes (the usual 5-10 turns on a 2 watt 10 ohm carbon resistor type of thing) should do the trick. I have found that merely changing tubes or moving the wiring around some will sometimes cure parasitics. Some sets have them worse than others. If you notice the plate current abnormally going upwards at odd times, it may be due to parasitics. Use of a FS meter nearby will quickly indicate odd oscillations that sometimes happen key up if power is still applied. A tuneable fs meter or very broad range receiver will help, sometimes, too, for keydown parasitics. Listen for the odd keying rate squirrels. Harmonics should not usually be a problem above the second harmonic, and proper antenna tuning circuits will cure second harmonic problems. Merely link coupling out to a line will generate fairly substantial second harmonics, although Hartley circuits, because of the HI-C design tend to have less second harmonic than other self-controlled oscillators of normal C design.

I am sure others will have all kinds of pet tricks to help, too. Wassay?

Good Luck

Bob/NA4G

Date: Wed, 26 Nov 1997 14:11:21 -0600
From: bill@skeeter.bvc.frco.com (William Hawkins)
Subject: Re: 811A Hartley Recap

Use a tube rated for a factor of 10 more than where you will operate -
hmmmm ...

Maybe there's a use for those 4-1000A transmitter pulls after all.
No I'm not licensed and would not put one on the air, but it's
something to shoot for. At \$5 each I couldn't pass 'em up.

Can you reduce filament power if you're not running at rated power,

and so prolong the life?

Regards,

Bill Hawkins bill@skeeter.bvc.frco.com OR bill@iaxs.net

Date: Wed, 26 Nov 1997 17:43:35 -0500 (EST)

From: rdkeys@csemail.cropsci.ncsu.edu

Subject: Re: 811A Hartley Recap

>

> Use a tube rated for a factor of 10 more than where you will operate -

> hmmm ...

> Maybe there's a use for those 4-1000A transmitter pulls after all.

> No I'm not licensed and would not put one on the air, but it's

> something to shoot for. At \$5 each I couldn't pass 'em up.

Sure.... I have about half a dozen 833's that I am holding for a 50-100 watt Hartley.

The idea is to run the tube as coolly as possible, to keep thermal heating transients in tube element spacing to a minimum, thereby increasing stability. If you have a spare stock of BIGGIE tubes, that would otherwise be unused, they make great Hartley fodder.

My ideas behind that were some play, a few years back, on Grandma Hartley's predecessor (started off as a '01A set, and grew to an 801A and then to a '211, and lasly to a big Collins 300 watt bottle, for my fun, one rainy afternoon). At each increase in the tube size used, the stability, also increased, if the power was left more or less proportionately low. The '01A was humping at 1 watt, but the 801A was quite comfy at 1 watt, as was the '211. At 5 watts, the 801a was squirrely, and the 211 was comfy. If I decreased the power of the 801A from 5 watts out to about 2-3 watts out, it also settled down, but was best at about 1-2 watts out. Alas, I was not able at the time to get that big Collins bottle to work very well, and it may have been mostly a dud, then. A year or so ago, I did basically the same set of tests in the Grammer Hartley from 1932, using the 6SN7, 6080, 6885(?) series (the pass regulator tubes). The same thing happened. The 6SN7 was good to about 2 or so watts, the 6080 size up to 4 or so, the 6AS7G to about 6 watts, and that big pass regulator tube up to about 10 watts output. Push any of them beyond a certain limit and the stability would go to pieces. The optimal values seemed to be about 10-20 percent of the book ratings on the tubes, for best stability, and about up to 33% for acceptable or usable stability. More than that tended to be squirrel city.

> Can you reduce filament power if you're not running at rated power,
> and so prolong the life?

Sure. You only need as much filament emission as will work for the power input you are using. On an 833, or an 813 and that sort of thing you can cut it down to around 90% filament voltage and it still works fine at reduced inputs suited to Hartley use. My rule of thumb is to reduce the filament voltage by 5-10% (wherever the best stability

is) and use that. On Grandma Hartley (now sporting a shiny new '211), I run around 9.3-9.4 volts via a series dropping resistor and that seems to be optimal at around 15-18 watts input and 5-7 watts output.

As to life expectancy, I dunno, but it should lengthen the filament life. I have been running a dud russian 807 with ``poor'' filament emission in the SRT-14 as a test for a few days, and it lasted about 2 weeks, after being declared dead in a tube tester, in reduced conservative navy output ratings. I have one or two pulled ``dead'' 842's from amplifier service in modulators, that still seem to work well in low power Hartleys at about 10 watts output. My guess is that most ``dead'' tubes in normal or commercial service should last a long time in low power Hartley service, if the filaments still light. Periodically, you might give them a few minutes of normal voltage cooking to run some thorium up to the filament surface. Other than that, if it lights, it probalby will be usable.

There is plenty of room for experimentation with odd or novel tubes in the Hartley Hustle. I have often thought a BIG CERAMIC TRIODE of some sort might be fun..... on the other hand, the old junker 833's and 849's from broadcast gear have that sort of warm fuzzy glow.....(:+)}... I am sure a 4-1000 could be wired up to suit well in a Hartley or a Dow circuit. One of the big Heintz and Kaufmann/Gammatron/Eimac 1000th sorts of thingies might be fun, and there are probably bigger ones out there if you look. The glow from such fine bottles in breadboard or wood panel rack Hartley service would be absolutely magnificent, in the true spirit of the 20's style gear! Remember to Scale UP Your Parts, accordingly for biggie tubies.

Yer filament warming bill would be something else, tho.....(:+){{..... But, it will heat the shack (I use Big Berth Radiomarine for that in winter, and it works great with the glow of her 813's peeking out from the back of the cabinet ventilation holes..... after 30 minutes warm up, the basement shack is quite comfy. I know.... 4-1000 Hartley Heaters fer everyhams shack! News at 11.

I would, for sanity's and safety's sake, keep the plate voltages down to around 1000 or less, generically, even with such big tubes, although in my novice days, I had a good friend who used to run a wooden panel rack set that used 4 each 4CX-250B's in loctal sockets with a small fan blowing air ACROSS the tubes, in a HUGE breadboard rack setup running from a 2400 volt pole pig. That was scary. It would almost melt the 40 watt fluorescent bulb we hung on the end of the antenna wire to scare up the neighbors. You could read the code from a mile away, by flashing flurorsecnt bulb. That was probalby overkill, and he had a box of about 50 spare 4CX250B's from somewhere surplus. Even breadboarded and sans blower cooling, I don't ever remember him changing tubes over the 2 years I was there.

There should be a lot of potential for things bigge wat glows brightly.

I sense ye an' other brethren be itchin' fer some breadboardin?

> Regards,
> Bill Hawkins bill@skeeter.bvc.frco.com OR bill@iaxs.net

Be careful and play Glowbugge!

73/ZUT DE NA4G/Bob UP

Date: Wed, 26 Nov 1997 17:15:25 -0600 (CST)
From: Bob Roehrig <broehrig@admin.aurora.edu>
Subject: Re: 811A Hartley Recap

On Wed, 26 Nov 1997 rdkeys@csemail.cropski.ncsu.edu wrote:

>
> Be careful and play Glowbugge!
>
> 73/ZUT DE NA4G/Bob UP

Yeah, don't forget what happened to Ross Hull who wrote a fine article on Hartleys - he was electrocuted while messing around with some TV stuff.

"No one is listening until you make a mistake"
E-mail broehrig@admin.aurora.edu 73 de Bob, K9EUI
CIS: Data / Telecom Aurora University, Aurora, IL
630-844-4898 Fax 630-844-5530

Date: Wed, 26 Nov 1997 14:39:31 -1000
From: Jeffrey Herman <jeffreyh@hawaii.edu>
Subject: CB-to-10m

I've converted a CB to do 10m CW; I key the B+ to the final (not too much chirp!). Is anyone else using a CB for 10m CW? I read only about using 'em for AM.

73,
Jeff KH2PZ / KH6

Date: Wed, 26 Nov 1997 19:52:04 -0500 (EST)
From: EWoodman@aol.com
Subject: Re: 811A Hartley Recap

In a message dated 97-11-26 17:37:01 EST, you write:

<< We are all pulling for his 811A Hartley. He seems to have it well in hand. >>

Well, I'm glad you think so! I'ts proving to be one squirrely little bugger! It seems as you go up in power they get tougher to tame. I can get 12 watts out of it but what a wild sound. It's going to take some judicious juggling of grid resistance, coil tap position, plate/grid cap, and plate voltage.

I did a bit more last night in regards to the cap value for grid to plate. It is fussy and will have to be adjusted in conjunction with all the other operating parameters but it does do the job of kicking the ole 811A in the pants every time you key up. I was also able to get about 12 watts out just before the grid resistor began to smoke suspiciously. (Forgot about increasing the wattage) I can't really do any more until I get the new rig built. I'm also operating at a bit of a disadvantage because of my power supply. It really can't hack it with a tube the size of the 811A. I'm going to have to build a heftier supply that can give me some more current before I can really finish testing it.

Rod, if you get started, I have a couple suggestions:

1. Use a coil with a bare conductor. Tubing or solid heavy wire. Something where you can easily adjust the tap position. My triode-connected 807 rig was very touchy about this and I'm suspecting the 811A is going to be similar. The 6SN7 however seems to be very tolerant. Maybe it's just the power level.
2. If you can find one, use a small variable cap for the grid/plate cap. Something with reasonable spacing and very low minimum capacitance. Down around at least 8 to 10pf. The pc board cap works fine but it would be nice to have it adjustable at least for initial setup. Saves trimming.
3. Make sure you use a hefty grid resistor to avoid the smoke show. Something commensurate with the power.....10 watt rig - 10 watt resistor, etc. as rule of thumb. Mine so far works from 2.4k up to 22k. Obviously with varying current draw, power output, and in my case....smoke. Don't know what the final value will be yet. Wish I had a bigger pot but mine is only a 5 watter.

The more things that are adjustable the better off you'll be. At least until you get it all figured out.

It's going to take some more fiddling around with this to see if it will really work well. This is my first foray into the realm of Hartleys with POWER. I think after this I'm going back to QRP level Hartleys. A 6SN7 with 150 to 350 volts on the plate works first time, every time for me with a nice clean signal and is relatively tolerant of components and adjustments compared to the BIG ones! (Or is it just me?)

Good luck.

Eric

Date: Wed, 26 Nov 1997 19:33:12 -0600 (CST)
From: Bob Roehrig <broehrig@admin.aurora.edu>
Subject: Re: 811A Hartley Recap

On Wed, 26 Nov 1997 EWoodman@aol.com wrote:

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> 2. If you can find one, use a small variable cap for the grid/plate cap.
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> around at least 8 to 10pf. The pc board cap works fine but it would be nice
> to have it adjustable at least for initial setup. Saves trimming.

If I may make a suggestion: I assume you are using a shunt fed circuit using cap coupling from the tank coil to the grid and another cap from the other end of the coil to the plate. The cap should be large enough so the reactance is quite low at the frequency used. In my 80 meter hartley I use 250pf at 10KV for each (Centralab xmitting "doorknobs"). 10pf is way too small.

> 3. Make sure you use a hefty grid resistor to avoid the smoke show. Something
> commensurate with the power.....10 watt rig - 10 watt resistor, etc. as rule
> of thumb.

Most assuredly. I smoked my temporary grid pot too. I now have three, 2-watt jobs in parallel at just under 4K total R.

"No one is listening until you make a mistake"
E-mail broehrig@admin.aurora.edu 73 de Bob, K9EUI
CIS: Data / Telecom Aurora University, Aurora, IL
630-844-4898 Fax 630-844-5530

Date: Wed, 26 Nov 1997 18:13:11 -0800 (PST)

From: Ken Gordon <keng@uidaho.edu>

Subject: Re: 811A Hartley Recap

> in my novice days, I had a good friend who used to run a wooden panel
> rack set that used 4 each 4CX-250B's in loctal sockets with a small
> fan blowing air ACROSS the tubes, in a HUGE breadboard rack setup running
> from a 2400 volt pole pig. That was scary. It would almost melt the

Ye, gods and little fish-hooks!!! :-)

BTW, I used a 4X150A in my DX-35 once, with a wooden model airplane propellor mounted to an Erector Set motor hanging above it from the ceiling. The FILAMENT heat alone melted the solder connections on the bottom of the socket.

Bob, the more you talk, the more I see, before my very eyeballs, the sight of my dreamed of 304TL Hartley.

More later.

Ken W7EKB

Date: Wed, 26 Nov 1997 23:39:28 -0500 (EST)

From: rdkeys@csemail.cropsci.ncsu.edu

Subject: Re: 811A Hartley Recap

>
> On Wed, 26 Nov 1997 EWoodman@aol.com wrote:
>

> >
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> so the reactance is quite low at the frequency used. In my 80 meter
> hartley I use 250pf at 10KV for each (Centralab xmitting "doorknobs").
> 10pf is way too small.

I think he is referring to the grid-plate capacity addition, where it
give some additional grid-plate capacity over the low value inherent
in the tube, normally. Those need to be just enough to get it going,
if added externally to the tube ACROSS the grid/plate terminals.
I have thought that a neutralizing cap would probably work OK, but
never tried it, yet. One of the screw round plate things should do.

Bob/NA4G

Date: Wed, 26 Nov 1997 22:41:06 -0500 (EST)
From: EWoodman@aol.com
Subject: Re: 811A Hartley Recap

In a message dated 97-11-26 20:20:01 EST, Bob wrote:

<< The trick, I have found, is to pick a larger tube
than actually would be used, by one order of magnitude.....i.e., for
a 5-10 watt input, drift-free, and easy to work, use a 50 watt bottle.
For a 50 watt input, drift-free, use a 250 watter or larger, etc.
That way, heating excursions are minimal. Running an 811 sized tube
at around 10-20 watts input, should net a relatively stable set. >>

Yup, I'll sure go for that. From what I'm seeing so far with the 811 I 'd say
it definitely holds true. I'll be happy if I can get 10-20 watts input
without it sounding like a bunch of squirrely little critters. If you push
the output like I did the other night it really sounds horrendous. Even with
my tests in my 160m unmodified rig, if I only give it 350v at 30ma and take 3
watts out, it sounds pretty decent. But.....It would be nice to do
a bit better than that with that size jug.

Back about 3 years ago when I built my first Hartley I was ignorant of all
this stuff. (still am pretty much.... but learning) All I had was a schematic
and no help from anyone. Needless to say it was a miserable failure. Oh it
oscillated, but that's about all you could say about it. I was thinking of
output in terms of what it would do as a modern day amp and was very
disappointed at the poor (actually disgusting is a better word) signal at the
power level I thought I should be attaining. Then I found the Glowbug list
and began pouring over all the postings Bob had made about self excited
oscillators. It was then I realized I knew nothing about what I was doing.
Once you realize you have to build "big" to get "little" it works much
better.

Just my 2 cents. (again!)

Eric

Date: Thu, 27 Nov 1997 00:01:56 -0500 (EST)
From: rdkeys@csemail.cropsci.ncsu.edu
Subject: Re: 811A Hartley Recap

>
> > in my novice days, I had a good friend who used to run a wooden panel
> > rack set that used 4 each 4CX-250B's in loctal sockets with a small
> > fan blowing air ACROSS the tubes, in a HUGE breadboard rack setup running
> > from a 2400 volt pole pig. That was scary. It would almost melt the
>
> Ye, gods and little fish-hooks!!! :-)

Yeah, but it sure was fun fer de ol' geek-eyed greenish novicey sort.
I learned early on about safety with him around that monster.

> BTW, I used a 4X150A in my DX-35 once, with a wooden model airplane
> propellor mounted to an Erector Set motor hanging above it from the
> ceiling. The FILAMENT heat alone melted the solder connections on the
> bottom of the socket.

His were mounted on the top surface of a flat plywood board about 24
inches square, on a shelf in a ``rack'' of 2x4's for several of these
shelves. The pole pig sat in the corner behind the beast.

Eimac did some little published tests using the 4X250 tubes in ambient
air WITHOUT cooling from forced air through the external anodes, and
the tubes did quite well up to around 75 watts plate dissipation in
ambient air. With some air blowing across them, they can tolerate
much more. 4 of the 250's should be able to run 2kw DC input on CW at
2250 volts plate supply (with proper forced air blower cooling).
He ran those at about half that with a little fan about 6 inches in
diameter blowing air across the board, and they did just fine at 1kw.
He used plain ceramic loctal sockets, and nothing melted.

> Bob, the more you talk, the more I see, before my very eyeballs, the sight
> of my dreamed of 304TL Hartley.

Hee Hee..... that is what we are all about, right? Lessee a 304TL
at about 1000 volts and mebbie 150-250ma ought to do the trick for around
50-75 watts output, methinks, using 3/8 inch copper tubing coils and
broadcast sized padding caps or glass plate padding caps and some sort
of smallish double to quadruple spaced transmitter cap for tuning across
3500-3600 or such, with RF chokes wound from no. 22 wire to about a run
of mebbie 250-300 turns on a 2 inch coil form, and a 100-200 watt sized
5-10K grid leak. Yup... should purr just fine. A xxxTH might be better
if you can find it but the old xxxTL should work easily. Scale upsized
until yer conscience or yer power supply hurts (833A, 6C39, 450TH, 1000TH
mebbie).....(:+)}.....

Think conservatively, but run them that way, too.....

> More later.

Do, indeed!

> Ken W7EKB

Bob/NA4G

Date: Thu, 27 Nov 1997 00:46:08 -0500 (EST)

From: rdkeys@csemail.cropsci.ncsu.edu

Subject: Re: 811A Hartley Recap

>

> In a message dated 97-11-26 20:20:01 EST, Bob wrote:

>

> << The trick, I have found, is to pick a larger tube
> than actually would be used, by one order of magnitude.....i.e., for
> a 5-10 watt input, drift-free, and easy to work, use a 50 watt bottle.
> For a 50 watt input, drift-free, use a 250 watter or larger, etc.
> That way, heating excursions are minimal. Running an 811 sized tube
> at around 10-20 watts input, should net a relatively stable set. >>

>

> Yup, I'll sure go for that. From what I'm seeing so far with the 811 I 'd say
> it definitely holds true. I'll be happy if I can get 10-20 watts input
> without it sounding like a bunch of squirrely little critters. If you push
> the output like I did the other night it really sounds horrendous. Even with
> my tests in my 160m unmodified rig, if I only give it 350v at 30ma and take 3
> watts out, it sounds pretty decent. But.....It would be nice to do
> a bit better than that with that size jug.

I would expect that you should be able to get around 7 watts output, stably..... maybe 10. Some of that will depend upon the power supply stability. Again, the rulses de thumbio is build big, even in the power supply department. That way, the net loading effect of the set on the power supply is minimal, even with unregulated power supplies or those heathen monster rotary devices I am wont to use as MG sets (i.e., dynamotors). A 100 watt dynamotor on a 10 watt set with a 10 watt additional bleeder load is smooth and stable as silk.

I tend to heavily bleed my unregulated power supplies in Hartley use, to increase stability. Also, there is an OT trick I will let out of ringing the power supply.... i.e., cut DOWN the capacitance in the power supply to the minimal value so that the net chirp is at a keying rate rather than a slow youp. I tend to use a pair 4/6/8/10 ufd caps and a 1-10 henry choke and let the rac creep up a few percent. Loading it down with a load comparable to that of the set or around half that, will tend to stabilize it even more, and the slight AC content of the note is not objectionable, and rarely heard by most. If you run MG sets, then a 1/4 or less load will usually be fine as bleeder. So, that means scaling up the anticipated power supply by a factor of four, loading it down by the factor of 0.5-1.0 x the set input power, and away you go! Regulated supplies,..... use them if you have them,

but they are not really needed.

> Back about 3 years ago when I built my first Hartley I was ignorant of all
> this stuff. (still am pretty much.... but learning) All I had was a schematic
> and no help from anyone. Needless to say it was a miserable failure. Oh it
> oscillated, but that's about all you could say about it. I was thinking of
> output in terms of what it would do as a modern day amp and was very
> disappointed at the poor (actually disgusting is a better word) signal at the
> power level I thought I should be attaining. Then I found the Glowbug list
> and began pouring over all the postings Bob had made about self excited
> oscillators. It was then I realized I knew nothing about what I was doing.
> Once you realize you have to build "big" to get "little" it works much
> better.

Well, I don't lay claim to being the guru, by any stretch, but I do have
around 20 years of running these things, first-hand, and have learned a
little by rote grunting and a lot of the ``forgotten lore'' from the early
writers. It is mostly there, if you poke around in the early writings
(or is that the lost ancient writings from the Alexandrian Radio Library?).

The prime rule for the ``1929 style'' stable self controlled oscillator is
build with overkill, and run it conservatively. That way it will sound
like a kenicoyasawhooie in disguise..... but with a bit of ``character''.
That concept was developed by Ross Hull and the technical staff of QST
shortly after new regulations came into place about 1928, and the results
were published in the late 1928 and early 1929 QST's, and have forever
since been known as the ``1929 style'' sets. They were characterized by
excellent stability for the era, and are still quite usably stable, even
today. The main technical points were build big, and use HI-C circuits,
where the added capacity in tuning circuits (compared to earlier designs)
made the transmitters much more stable, and less prone to odd frequency
excursions. That was also the time of the ``copper tubing'' style coils
built like a battlegewagon, with short heavy leads, and good insulation.
These concepts do make for a much better self controlled oscillator.

Those articles make prime reading material.

The size of the set is not really important....

The ratio of component size to power output or input IS.

> Just my 2 cents. (again!)

Well it be, to have 2 cents to devote to such projects.

Else, scrounge, with vigour, creatively!

There is a famous story in the War Years of QST about the GI's that
remained in the islands (Phillippines) after the fall, in WWII. They
had a portable station, for a while, made from a 1930'ish Handbook as
reference, and whatever parts could be ``reconnoitered'', and if memory
serves me correctly it was a classic Hartley or TNT circuit self-controlled
oscillator, and possibly a regen receiver. Something to think about!
That seemed to show up in one of the various war movies of the period.
If anyone can find that article, it might be fun to peruse.
Practical Self-Controlled Oscillators - 101, a hard-knocks course!

Bob/NA4G

Date: Mon, 24 Nov 1997 23:12:43 -0800
From: Gerald Caouette <ve6nap@oanet.com>
Subject: Tubes for sale

I have 400 NIB/NOS JAN 5933 valves
These are a military equivalent to the 807W
Same base, pin out and electrical specifications

looking for \$6.00 U\$ each
or
4 for 20.00 U\$
10 for 45.00 U\$
50 for 200.00 U\$ (1 case)
100 for 375.00 U\$ (2 cases)

I also have some military tube retainer plates for these or other tubes
with the same diameter. Will ship these 1 per tube on a first
come basis till I have no more.

Shipping and any applicable duty and taxes would be the responsibility
of the purchaser.

Gerald
(403)465-3082 EVE
de
ve6nap@oanet.com

Date: Wed, 26 Nov 1997 21:32:13 -0800 (PST)
From: Ken Gordon <keng@uidaho.edu>
Subject: Re: 811A Hartley Recap

> He used plain ceramic octal sockets, and nothing melted.

Snazzy info on those, Bob: very interesting too.

>
> > Bob, the more you talk, the more I see, before my very eyeballs, the sight
> > of my dreamed of 304TL Hartley.
>
> Hee Hee..... that is what we are all about, right?

Right! I even have the necessary filament transformer.

> Lessee a 304TL
> at about 1000 volts and mebbie 150-250ma ought to do the trick for around
> 50-75 watts output,

I was figuring (using your 10% figure) at no more than 70 watts output.
1500 volts at about 60 - 70 ma.

> methinks, using 3/8 inch copper tubing coils and
> broadcast sized padding caps or glass plate padding caps

How do you figure these out? Sizes, etc.? Tinfoil for plates, I suppose,
and standard window glass...or thinner?

> and some sort
> of smallish double to quadruple spaced transmitter cap for tuning across
> 3500-3600 or such, with RF chokes wound from no. 22 wire to about a run
> of mebbie 250-300 turns on a 2 inch coil form, and a 100-200 watt sized
> 5-10K grid leak.

I already have one of those. Didn't know what to do with it...up until
now! :-)

> Yup... should purr just fine. A xxxTH might be better
> if you can find it but the old xxxTL should work easily.

I have 4ea NIB 304TLs: they were being thrown out by our Physics
department.

> Scale upsized
> until yer conscience or yer power supply hurts (833A, 6C39, 450TH, 1000TH
> mebbie).....(:+)}.....

I also have 4 ea used 8000s which would run 60 - 70 watts output each
also. I think they would look really neat in a push-pull parallel Hartley.

>
> Think conservatively, but run them that way, too.....
>

Makes more sense all the time.

BTW, for a push-pull Hartley, what do you do? Build two and put them back
to back? No, that's not right, is it?

Ken

Date: Wed, 26 Nov 1997 22:06:08 -0800 (PST)
From: Ken Gordon <keng@uidaho.edu>
Subject: 304TL Hartley...

One thing, 5 volts @ 25 amps for the filament means that the filament
alone requires nearly twice as much power as the RF power output.

Interesting, 'eh wot? :-)

BTW, conditions on 80 were pretty lousy tonight. Only heard W5FRS.

Ken W7EKB

Date: Wed, 26 Nov 1997 22:09:55 -0800 (PST)
From: Ken Gordon <keng@uidaho.edu>
Subject: Re: Push-pull Hartley...

Bob (or anyone else for that matter), got any schematics for a Push-pull Hartley?

Ken W7EKB

Date: Thu, 27 Nov 1997 08:39:37 -0600 (CST)
From: Bob Roehrig <broehrig@admin.aurora.edu>
Subject: Re: 811A Hartley Recap

On Wed, 26 Nov 1997 rdkeys@csemail.cropsci.ncsu.edu wrote:

> I think he is referring to the grid-plate capacity addition, where it
> give some additional grid-plate capacity over the low value inherent
> in the tube, normally. Those need to be just enough to get it going,
> if added externally to the tube ACROSS the grid/plate terminals.
> I have thought that a neutralizing cap would probably work OK, but
> never tried it, yet. One of the screw round plate things should do.

OOPS - yeah I got confused.

"No one is listening until you make a mistake"
E-mail broehrig@admin.aurora.edu 73 de Bob, K9EUI
CIS: Data / Telecom Aurora University, Aurora, IL
630-844-4898 Fax 630-844-5530

End of glowbugs V1 #164
